A Comprehensive Study of ChatGPT: Advancements, Limitations, and Ethical Considerations in Natural Language Processing and Cybersecurity

Abstract

This paper presents an in-depth study of ChatGPT, a state-of-the-art language model that is revolutionizing generative text. We provide a comprehensive analysis of its architecture, training data, and evaluation metrics and explore its advancements and enhancements over time. Additionally, we examine the capabilities and limitations of ChatGPT in natural language processing (NLP) tasks, including language translation, text summarization, and dialogue generation. Furthermore, we compare ChatGPT to other language generation models and discuss its applicability in various tasks. Our study also addresses the ethical and privacy considerations associated with ChatGPT and provides insights into mitigation strategies. Moreover, we investigate the role of ChatGPT in cyberattacks, highlighting potential security risks. Lastly, we showcase the diverse applications of ChatGPT in different industries and evaluate its performance across languages and domains. This paper offers a comprehensive exploration of ChatGPT's impact on the NLP field.